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Description of a new caviomorph rodent from Miocene of Colombia, South America

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Introduction

The vertebrate paleontological investigation was done in the La Venta badlands in the upper Magdalena River Basin, Department of Huila, Colombia, South America from December, 1977 to February, 1978. The research project was organized by Kyoto University, Japan and Ingeominas, Colombia. The nearly same project has been carried out in the same general area mainly by Dr. R. A. Stirton, University of California, U.S.A., in 1944, 1945 and 1949. The importance of the La Venta fauna was announced by Dr. Stirton and his co-workers, Dr. D. E. Savage and Dr. R. W. Fields, University of California. Especially, several Miocene primates were discovered and described by them. They provided the basic data to clarify the evolutionary sequences among the South American monkeys.

The major aim of our research project is to find more materials of Miocene primates from Colombia. But no primates are found by us during the research period of time. In the course of our researches, several hystricomorph rodents are discovered from the La Venta badlands. Most of them are identical to the forms described by Dr. Fields. They are: *Scleromys schürmanni*, *S. colombianus*, *Olenopsis aequatorialis*, *Neoreomys huilensis* and *Prodolichotis pridiana*. A rodent palate in the large collection of fossil mammals is very close morphologically to *Prodolichotis pridiana* but is clearly smaller than the holotype of *P. pridiana*. This form must be treated as a new species of *Prodolichotis*. The material is described and discussed below.

Acknowledgments

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Geological Note

Only very brief geological observation was done. The following was discussed by Dr. Fields (1957; pp. 389-390) and is cited here.

"The beds in which the La Venta fauna occurs are apparently part of the series of

strata called Honda. The sequence exposed in the La Venta badlands consists of gravels, sands, and clays. They were deposited over a vast flood plain during late Miocene time. Field evidence indicates that conditions of depositions were variable, and that alternating periods of flooding and drying caused the formation of red-bed deposits and peculiar torpedo-shaped sandstone concretions. Lithologic contents of the sediments indicate that they were derived from mountainous areas to the south and west of the La Venta region, and suggest that the source area was not far from the site of deposition.

"A restoration of the environment in the area of the La Venta bandlands in late Miocene time is based on both paleontologic and lithologic information. The La Venta area was a broad flood plain through which the ancestral Magdalena River and many tributaries meandered, and stream conditions varied from place to place and time to time. Vast amounts of sediments were deposited over the flood plain during periods of flooding. The rivers and streams retreated to their channels in the dry seasons. Across wide stretches of the flood plain the retreating waters left broad mud flats and swamps.

Most of the fossil rodents collected by us are to be found in clayey matrix.

Systematic Account

Family Caviidae

Prodolichotis new species, unnamed

Locality: Villa Vieja

Age: Late Miocene

Description: The material is crushed and broken. Only the palatal region is preserved. The rostrum anterior to P^4 is broken so that the dental formula cannot be known. The right cheek tooth series is well preserved and well observed, but the left one is concealed by hard matrix. If the matrix is removed completely, the left cheek tooth series may also be well observed. Because of hard nature of the matrix, it has not been removed away as yet.

The incisors are not preserved on this material. The palate at hand is somewhat deformed. The pressure acted on this material obliquely: from left hand side and from posteriorly as well. The left cheek tooth series is replaced anteriorly so that the posterior loph of left M^1 faces to the anterior loph of right P^4 . The rostrum just anterior to left P^4 is broken away but a part of the rostrum anterior to right P^4 is preserved. There, the maxillary bone is exposed and no alveolars are observed on this region. It indicates that no P^3 's are present on this animal. The cheek tooth dental formula of this animal may be thought to be $P1, M3$ on upper.

The cheek teeth are evergrowing and unilaterally hypsodont. They consist of essentially two folds like cheek teeth of lagomorphs. But these two lobes are separated by deep re-entrant fold. Only M^3 has an additional posterior flange.

P^4 has two lobes. The anterior lobe is wider than the posterior lobe. The length is

almost identical between these two lobes, but the anterior lobe is situated a little more lingually than the posterior lobe. The lingual corner of the anterior lobe forms nearly a right angle. The anterior face of the anterior lobe runs antero-buccally from the lingual corner, and runs postero-buccally. The enamel is thick on the lingual one-third on the anterior face of the anterior lobe. On the buccal face of the anterior lobe, almost no enamel is seen and dentine is exposed directly. The posterior wall of the anterior lobe runs postero-buccally and turns to run buccally. On the posterior wall of the anterior lobe, rather thick enamel is observed. The posterior lobe forms an acute angle on its lingual corner. This makes the posterior lobe narrower antero-posteriorly than the anterior one. The anterior wall of the posterior lobe has thick enamel and this thick enamel wall joins to the anterior enamel wall of the anterior lobe on the one-fourth buccal of the total length. The posterior wall of the posterior lobe runs straightly postero-buccal. The general shape of the posterior lobe is triangle. The buccal two-fifths of the posterior wall of the posterior lobe lacks enamel. On the buccal wall of this lobe has no enamel either. The re-entrant fold of the two lobes is really narrow on this tooth. A small deposit of cement is seen between lobes.

The anterior lobe of M^1 forms an acute angle on its lingual corner. The width and the length of the anterior lobe are almost identical to those of the posterior lobe, respectively. The anterior face of the anterior lobe forms a round wall, and on lingual one-half of this wall, a thick enamel wall is seen. On the buccal one-half of the anterior wall and the buccal wall of the anterior lobe, enamel lacks. The posterior wall of the anterior lobe concaves a little postero-lingually so that the re-entrant fold is wide. The general shape of the posterior lobe is almost identical to the posterior lobe of P^4 . The anterior wall of the posterior lobe joins to the posterior wall of the anterior lobe close to the buccal wall of the tooth. But the dentine of the anterior lobe is contiguous to the dentine of the posterior lobe.

The general shape of M^2 is almost identical to that of M^1 . The anterior wall of the anterior lobe is rounded: the anterior corner of the triangle is truncated. This makes the anterior lobe narrower than the posterior lobe. The anterior and the posterior lobes run parallel so that the re-entrant fold on this tooth is narrower than in M^1 .

The transverse length of M^3 is shorter than M^1 or M^2 . The additional flange is developed posterior to the posterior lobe on the buccal one-half of the tooth.

Keys to the Identification of Individual Teeth

P^4 : wider anterior lobe and narrow re-entrant fold.

M^1 : wider re-entrant fold.

M^2 : anterior and posterior lobes run parallel and re-entrant fold is not so wide.

M^3 : additional posterior flange.

Discussion

This form is clearly smaller than the holotype of *Prodolichotis pridiiana*. This is almost one half of *P. pridiiana*. But the general morphology of teeth is so similar that the form is surely belong to the same genus. At the present time, the size is the only criterion for the separation of species of the genus *Prodolichotis*.

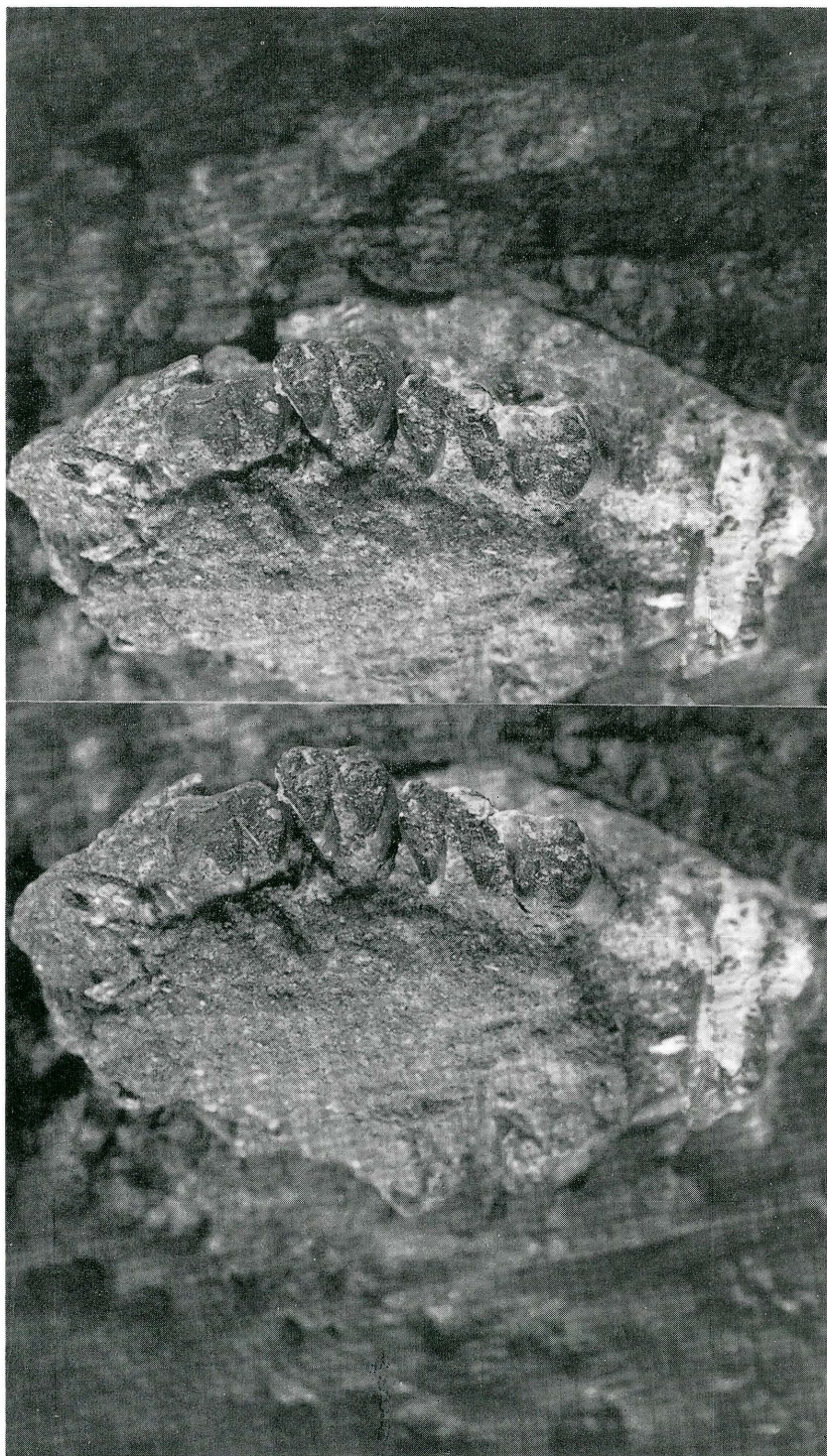


Photo. Stereo view of upper jaw